

Drug Delivery

Sierra Neuropharmaceuticals, Inc. (“Sierra” or the “Company”) is a startup biopharmaceutical company focused on the development and commercialization of small molecule therapeutic products to treat several diseases of the brain for the medically refractory patient. Many of the most effective oral medicines are toxic to the body (and not to the brain) and patients with these diseases are often unable to reliably take oral medications. Sierra has addressed these problems by reformulating orally administered medications for placement into an implantable pump, for administration into the fluid around the brain, for diseases including Epilepsy, Schizophrenia, Bipolar Disorder, Anxiety Disorders and Major Depression.

Implantable pumps for the nervous system have more than 20 years of safety data and physician experience and are being used to treat over 100,000 people today for spinal related diseases of pain and spasticity. Advantages of direct delivery to the CSF include the ability to limit systemic exposure while treating the brain, simplifying patient compliance, and the ability to administer drugs with greater precision and control (including constant drug dosing). Sierra helps refractory patients with neurologic and psychiatric disorders receive medications that are highly effective through an implantable drug technology that decreases systemic side effects, decreases drug-drug interactions, decreases frequency of dosing to improve patient compliance and precise control of administered dose.

Off-patent generic compounds are the targets of Sierra’s reformulation effort. There is currently no pharmaceutical company or pump manufacturer with an approach focused on direct delivery of neurological or psychiatric drugs to the brain. Sierra will explore partnerships for regulatory stage and commercial stage development to reduce the risk of bringing drugs to market.

The Company was formed in 2005 from the basis of the intellectual property of its scientific founders at the University of Colorado (Daniel Abrams, MD, Raymond Bunch, MD, Tom Anchordoquy, PhD and Karen Stevens, PhD). The founders bring expertise in the areas of reformulation, clinical neuroscience expertise, and pharmaceutical drug development and commercialization.

Sierra’s will initially develop two products through Phase II proof of concept trials:

SNP001: The oral form of this medication (felbamate) is effective for medically refractory epilepsy, but has problems with severe hepatic and bone marrow toxicity that limit its utilization. Further, patient adherence is an important issue in the medically refractory epilepsy patient population. Central reformulated felbamate can be administered in dramatically lower amounts directly to the brain with extremely low systemic spillover through an implantable pump requiring repeat dosing every 3 months. Given the dramatically lower dosing, we expect that there will be reduced risk and consequent requirement for blood monitoring.